

What is claimed is:

1. A hydrogen storage alloy material prepared by subjecting an amorphous alloy to a heat treatment in air or an oxygen atmosphere, said amorphous alloy having a composition, in 5 atomic %, expressed by the following formula: $Zr_{100-a-b}Pd_aM_b$ (wherein $15 \leq a \leq 40$, $0 < b \leq 10$, and M is at least one metal selected from the group consisting of Pt, Au, Fe, Co and Ni), wherein said hydrogen storage alloy material has a structure where said Pd, said metal M and one or more compounds thereof are dispersed in a parent phase of ZrO_2 in the form of ultrafine particles.

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2. The hydrogen storage alloy material as defined in claim 1, which exhibits a hydrogen storage amount of 2.5 weight % or more in a weight ratio relative to Pd contained in said hydrogen storage alloy material.

15 3. A hydrogen storage/transportation container comprising a hydrogen storage/transportation medium consisting of the hydrogen storage alloy material as defined in claim 1 or 2.

4. A method for producing the hydrogen storage alloy material as defined in claim 1,
20 comprising:

preparing a melt of a master alloy formed through a melting process;

rapidly solidifying said melt at a cooling rate of 10^4 K/s or more to form said amorphous alloy; and

25 subjecting said amorphous alloy to an oxidizing heat treatment in air or an oxygen atmosphere at 250 to 350°C to selectively oxidize said alloy element Zr so as to allow said Pd, said metal M and one or more compounds thereof to be dispersed in a parent phase of ZrO_2 in the form of nanoparticle-size ultrafine particles.